

The total number of species recorded in the preliminary, the first, the second and the third supplementary lists is 2461.

The number of Insect Galls, 93; Slimemolds, 15; Algae, 101; Fungi, 813; Lichens, 126; Hepatics, 31; Mosses, 106; Ferns, 36; Flowering Plants, 1130.

SHORTER NOTES

PASSAIC COUNTY, N. J.

On September 22nd a rapid exploration was made by me in the town of Butler in the vicinity of Star Lake; and, at intervals of about three weeks, short trips were made to Boardville and Pompton Lakes. The greatest distance between any two of these places is not more than six miles, the rock formation is the same in all and the general configuration of the land is similar. Certain differences and resemblances in the flora are noteworthy. The natural conditions have been modified most near Pompton Lakes and least in the vicinity of Boardville.

Six species of orchids in all were found in the three localities, though *Corallorrhiza maculata* was the only one seen in each of them. *Cypripedium acaule* and *Peramium pubescens* were found at Butler and at Boardville only, *Corallorrhiza odontorhiza*, at Butler only. The smaller coral root was decidedly more frequent at Butler than *C. maculata*, which is unusual so far as my observation goes. The *Peramium* is well established near Boardville and rather widely scattered. Many of the plants are young. At Star Lake only one plant was seen. Precisely the opposite is true of the prevalence of *Cypripedium acaule* in these two places.

Near both Butler and Boardville many beautiful plants were seen of the rose-colored form of *Hypopitys*.

In the clefts of rocks on the northeast side of a cliff near Boardville are some small colonies of *Woodsia ilvensis* (L.) R. Br. *Ionactis linariifolius* (L.) Greene is frequent at Boardville and Butler. In an old woodroad in a sunny spot near Boardville, is a small colony of *Gentiana quinquefolia* L.

Special attention was given to the two species of *Chimaphila* in order to test the statement in Taylor's Flora that *C. corymbosa* Pursh is "less common" than *C. maculata* (L.) Pursh. The statement was found to be emphatically true in two of the

localities visited, but near Pompton Lakes only one plant of *C. maculata* was observed and a large and flourishing colony was found of *C. corymbosa*, on one of the ridges, in an open, much-frequented wood, near camping places.

Just outside the village of Ramsey in Bergen County, is a low wood in which *Lycopodium lucidulum* Mx. is very abundant and near by a swamp that is possessed by *Equisetum* and *Symplocarpus*.

There are some advantages in botanizing in the early autumn, before the leaves have fallen too abundantly, for the decay and shriveling of many herbs makes it easier to detect some species that are wont to hide.—H. M. DENSLOW.

A Mid-Devonian Callixylon; by C. J. Hylander, Amer. Jour. Sci., Vol. IV, Oct., 1922, pp. 315-321, with 6 figs. in text.

Describes a new species of petrified wood from the Hamilton of Eighteen Mile Creek, western New York. Pit grouping on the radical tracheidal walls in series, determines the reference to *Callixylon*, a genus established by Zalessky for wood with the grouped pits from the Upper Devonian of the Province of Ekaterinoslav, Russia. As the Russian stems retain primary xylem strands or old cryptogamic wood next the pith they may at once be included in the *Pityæ*.

American forms are arbitrarily referred to *Callixylon*, since the inner limits of the secondary wood have not been seen. But as no new generic feature appears, inclusion in any other Cordaitalean genus would be unsatisfactory.

Three American species with the grouped pits are cited; whence the *Callixylon* type of secondary wood marks certain widespread forest forming elements of the mid to Upper Devonian, and may extend into the Carboniferous, as follows:

<i>Callixylon</i>	<i>Trifilievi</i>	Upper Devonian	Russia.
"	<i>Oweni</i>	" "	Indiana.
"	<i>Newberryi</i>	Mid-Devonian to Lower Carboniferous,	Ohio.
"	<i>Marshii</i>	Mid-Devonian	New York.

Thin growth rings are observed in the new *Callixylon*, and such hence persisted from mid to late Devonian time, having the same development in *C. Oweni*. These rings are not held to indicate as sharp seasonal change as those of existent plants. But, scant attention has been given the fact that in old and

simpler woods growth rings do not become a fixed or structural feature. The simpler type of growth ring occurs in both the Mesozoic and recent cycads, and Chamberlain finds rings in a monocotyl. Accentuation of growth ring must at first have gone on very slowly as measured by geologic periods, and is mainly correlated with the more marked tracheid and wood ray differentiation of mid to later Mesozoic time.—G. R. WIELAND.

BOOK REVIEWS

CHASE'S FIRST BOOK OF GRASSES*

The increasing disposition among beginning students in botany to select the grasses as a special field of study will no longer be hampered by the lack of an adequate hand-book. Mrs. Chase has demonstrated, contrary to the practice of the ordinary "How To Know" botanical literature, that scientific method need not be sacrificed in order to make the subject attractive to the beginner. From the beginning she urges the student to study the grasses themselves; but as these cannot be provided in a book, a series of careful drawings, purportedly somewhat diagrammatic, is furnished. The student is made clearly to understand that the classification of grasses is based on the *spikelet*, and the first lessons are therefore devoted to a careful study of the general structure of the theoretical spikelet. From this *generalized* spikelet the author passes to a study of its actual modifications in the order of increasing complexity. Beginning with the *pedicelled* spikelet having more than one floret as approximating most closely to the ideal diagrammatic form, we pass from the simplest type as shown in *Bromus* through the best-known typical genera of the tribe Festuceae to the most complex modification of the type in *Scleropogon*. The returning to the simple spikelet illustrated in *Bromus*, a fresh start is made along another line of differentiation, which leads us from the simplest type of *sessile* spikelet in a two-sided spike as shown in *Agropyron* through the various modifications of spicate inflorescence to its greatest complexity in *Hordeum*. The progressive development of the spikelet with more than

* Chase, Agnes. A First Book of Grasses. Pp. 121, 94 figs. New York, The Macmillan Co. 1922. \$1.00.